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## ARTICLE

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Mia Lybkær Kronborg Nielsen, Samuel Ellis, Michael N. Weiss, Jared R. Towers, Thomas Do ... [See all authors](#)

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Abstract



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## Research



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# Temporal dynamics of mother–offspring relationships in Bigg's killer whales: opportunities for kin-directed help by post-reproductive females

Mia Lybkær Kronborg Nielsen<sup>1</sup>, Samuel Ellis<sup>1</sup>, Michael N. Weiss<sup>1,2</sup>, Jared R. Towers<sup>3,4</sup>, Thomas Doniol-Valcroze<sup>4</sup>, Daniel W. Franks<sup>5</sup>, Michael A. Cant<sup>6</sup>, Graeme M. Ellis<sup>4</sup>, John K. B. Ford<sup>4</sup>, Mark Malleon<sup>2,4</sup>, Gary J. Sutton<sup>3,4</sup>, Tasli J. H. Shaw<sup>3,4</sup>, Kenneth C. Balcomb III<sup>2</sup>, David K. Ellifrit<sup>2</sup> and Darren P. Croft<sup>1</sup>

<sup>1</sup>Centre for Research in Animal Behaviour, University of Exeter, Exeter, UK

<sup>2</sup>Center for Whale Research, Friday Harbor, WA, USA

<sup>3</sup>Bay Cetology, Alert Bay, British Columbia, Canada

<sup>4</sup>Pacific Biological Station, Fisheries and Oceans Canada, British Columbia, Canada

<sup>5</sup>Department of Biology, University of York, York, UK

<sup>6</sup>Faculty of Environment, Science and Economy, University of Exeter, Penryn, UK

**id** MLKN, 0000-0002-3488-6263; SE, 0000-0001-9019-6040; JRT, 0000-0002-5700-1755; TD, 0000-0002-6852-6047; MAC, 0000-0002-1530-3077; DPC, 0000-0001-6869-5097

Age-related changes in the patterns of local relatedness (kinship dynamics) can be a significant selective force shaping the evolution of life history and social behaviour. In humans and some species of toothed whales, average female relatedness increases with age, which can select for a prolonged post-reproductive lifespan in older females due to both costs of reproductive conflict and benefits of late-life helping of kin. Killer whales (*Orcinus orca*) provide a valuable system for exploring social dynamics related to such costs and benefits in a mammal with an extended post-reproductive female lifespan. We use more than 40 years of demographic and association data on the mammal-eating Bigg's killer whale to quantify how mother–offspring social relationships change with offspring age and identify opportunities for late-life helping and the potential for an intergenerational reproductive conflict. Our results suggest a high degree of male philopatry and female-biased budding dispersal in Bigg's killer whales, with some variability in the dispersal patterns for both sexes. The patterns of dispersal provide insights

